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ABSTRACT

In recent years, the belief that marriage bestows large economic gains has generated enthusiasm for policy proposals that encourage the formation and continuation of two-parent families. This study examined the effects of family structure on economic resources, controlling for unobservable family background characteristics. Data were drawn from the 1968 through 1993 waves of the Panel Study of Income Dynamics, a longitudinal survey conducted by the University of Michigan's Institute for Social Research. The present analysis was based on a sample of children born into two-parent families, used to estimate the effects of divorce, and a second sample of children born into single-parent families, used estimate losses associated with being born out-of-wedlock. Findings indicated that family structure has a significant impact on the economic status of families with children. In the long run, family income of children who parents divorce and remain divorced for at least 6 years falls by 45 percent, and food consumption is reduced by 16 percent. Among the less-studied population of children born to single parents, there is no evidence of an increase in food consumption, but those whose parents marry and remain married for at least 6 years experience income gains of around 70 percent. The more modest effects of living with a single parent on food consumption suggest that children's access to essentials may be somewhat better protected than income estimates indicate. While these estimated effects are large, it is important to note that: because estimates are based on variation within the same families over time, they are substantially smaller than estimates based on cross-national comparisons of different types of families; the estimated changes do not apply to the typical child who experiences a parental divorce at a point in time, but rather to those whose parents are currently divorced; and while the estimate that single-parent families have substantially lower incomes than they would if a second parent were in the household, these income losses do not necessarily translate into a decline in children's resources. (Contains 38 references.) (HTH)

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THE ECONOMIC CONSEQUENCES OF ABSENT PARENTS

Marianne E. Page

and

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Abstract

We examine the effects of family structure on economic resources, controlling for unobservable family characteristics. In the year following a divorce, family income falls by 41 percent and family food consumption falls by 18 percent. Six or more years later, the family income of the average child whose parent remains unmarried is 45 percent lower than it would have been if the divorce had not occurred. Marriage raises the long-run family income of children born to single parents by 45 percent. These estimates are substantially smaller than the losses that are implied by cross-sectional comparisons across family types.

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I. Introduction

Over the past fifty years the number of single-parent families in the United States has skyrocketed. Between 1960 and 1995, the number of children living apart from one of their parents increased from 12 percent to almost 40 percent (McLanahan, 1997), the rate of divorce increased by over 200 percent (Friedberg, 1998) and the fraction of children born out-of-wedlock rose from about 5 percent to over 30 percent (Cancian and Reed, 2000). Half of all American children today are expected to spend part of their childhood in a family headed by a mother who is divorced, separated, unwed or widowed (Bumpass and Raley, 1995).

What does this change in family structure mean for American children? In particular, to what extent are the economic resources available to children living in single-parent families compromised by the absence of a second cohabitating adult?[1] Social scientists often assess the "effect" of family structure on economic well-being by comparing the average income among two-parent families to the average income of single-parent families (McLanahan and Casper, 1995; Spain and Bianchi, 1996; Waite, 1995). These studies unequivocally show that family structure is substantially related to economic well-being, and are often cited by those who advocate for societal and legal changes that would strengthen marriage (for example, Whitehead, 1996). In spite of their wide use, however, these types of statistics are unable to tell us how much of the observed gap is actually *caused* by the absence of a second parent. Cross-sectional comparisons across family types do not necessarily indicate how single-parent families would fare were they to become two-parent families because other factors may be partly responsible for the variation in resource levels.

The causal effect of family structure on a family's resources has important implications for public policy. In recent years, the belief that marriage bestows large economic gains has generated enthusiasm for policy proposals that encourage the formation and continuation of two-parent families (Gallager, 1996; Galston, 1996; Ooms, 1996; Popenoe, 1996; Waite, 1995; Whitehead, 1996). This enthusiasm has lead to several policy changes: the states of Arizona, Arkansas and Louisiana, for example, have created "covenant marriages," in which couples agree at the time they are married to conditions that make it harder for them to divorce.[2] In addition, about three quarters of states have broadened the eligibility criteria for the Temporary Assistance to Needy Families (TANF) program to include two-parent families. TANF's former incarnation as the Aid to Families with Dependent Children program (AFDC)), was targeted towards single-parent families on the grounds that children in such families suffer economic losses as a direct result of their parents' marital status. If the losses to children growing up in single-parent families are small, then the grounds for this type of targeting may be tenuous. If these losses are large, however, then targeted cash assistance may be an appropriate means of mitigating them.

This study has three goals. Our first goal is to estimate how much the economic status of single-parent children could be improved if they lived with both of their parents. Existing data do not allow us to answer this question directly, since we cannot directly observe children's consumption of goods and services. However, we are able to estimate how the income and food expenditures of children's families are affected by family structure, using a dynamic model with longitudinal data that allows us to incorporate family-specific fixed effects. We look separately at the impact of divorce and out-of-wedlock childbearing. Although other studies have estimated changes in family income following divorce, they have focused on comparisons of pre-divorce to

post-divorce resources, which do not take life-cycle earnings growth into account, and are thus likely to underestimate the true loss. To our knowledge, there have been no studies that have used a fixed effects model to estimate the resource costs associated with being born to a single parent.

Our dynamic model also allows us to trace out the family-level economic losses that are associated with single-parent status over an extended time interval. Children whose parents divorce, for example, may experience a short-term reduction in family income that is recouped in later years when their mothers remarry or become more active labor force participants. Quantifying the time-path of economic losses following a divorce or out-of-wedlock birth is particularly important in the wake of TANF, which places a five year life-time limit on receipt of benefits, and requires that participants become members of the labor force within two years of initiating benefits. If the costs of growing up in a single-parent family persist for many years, then these time limits may have serious implications for children's well-being.

Finally, we use our model to examine how family structure affects the components of income over time. We look separately at changes in fathers' earned income, mother's earned income, child support and alimony payments, and welfare income. This exercise allows us to see how families modify their behavior in response to a change in marital status.

We find that controlling for unobservable family background characteristics is important. Simple cross-sectional family income comparisons between children born out-of-wedlock and children born into two-parent families, for example, are almost 1.8 times bigger than our estimated cost of being born to a single mother. OLS regressions produce coefficient estimates of the effects of marriage among children born to single parents that are almost twice as large as our fixed-effects estimates. OLS estimates of the effects of divorce among children born to two

parents are more than 20 percent higher than the corresponding fixed-effects estimates. Nevertheless, even after controlling for unobservables, we estimate large family structure effects. Our dynamic analysis also shows that the gains associated with marriage fall somewhat over time for children born out-of-wedlock and that the initial losses experienced by children whose parents divorce are partially recovered in later years. Most of this recovery is explained by the fact that a substantial fraction of divorced mothers remarry. Finally, our dynamic income decompositions suggest that families respond to the absence of a second parent in a variety of ways that help mitigate some of the costs.

II. Estimating the Cost of Growing Up in a Single Parent Family

II.A. Background

It is well known that children growing up in single-parent families have lower incomes than children living in two-parent families. In 1999, for example, median family income for a two-parent family with children was $60,296, whereas median family income for a female-headed family with children was $22,418 (Census Bureau, March 2000 CPS). McLanahan and Sandefur (1994) estimate similar differences in assets across family types: using the PSID, they find that while 98 percent of two-parent families with an adolescent child own their own car, only 70 percent of similarly defined single-parent families own a car. Likewise, only 50 percent of such families own their home, whereas 87 percent of two-parent families (with an adolescent) are home-owners. Many believe that these differences in resources can explain a significant part of the well documented differences in socioeconomic outcomes between adults who grew up in two parent families and adults who grew up in single parent families. McLanahan and Sandefur, (1994), for example, attribute half of the difference in outcomes to differences in family income.[3]

Cross-sectional comparisons of income across different family types can be misleading, however. Table 1 shows that even prior to marital dissolution average family income and consumption are lower for families that will eventually go through divorce than for families that will remain intact. This suggests that part of the difference may exist for reasons other than differences in family structure. Previous researchers have noted this problem, but have struggled to address it[4], particularly when assessing the economic consequences for children born out-of-wedlock—the only estimates we have been able to find for these children are simple cross-sectional comparisons like those discussed above. Researchers have typically estimated the costs of divorce by comparing changes in income across two time periods, before and after a divorce occurs (for a review, see Holden and Smock, 1991; also McLanahan and Sandefur, 1994), but while cross-sectional comparisons are likely to overstate the effect of family structure, estimates based on simple "before and after" comparisons are likely to be downward biased since they do not control for life-cycle earnings growth. Most of these studies do not include a control group. Another drawback is that when the comparisons are restricted to only two points in time they overlook the possibility of dynamic adjustments to changes in marital status. The few studies that examine the time-path of income following divorce (Bane and Weiss, 1980; Butrica, 1998; Duncan and Hoffman, 1985a, 1985b; Peterson, 1989; Stirling, 1989, Weiss, 1984) are typically based on non-representative, dated samples.[5] More important, none of them employ regression analysis, so they are unable to control for what income growth would have been in the absence of the divorce or to control for other factors that may be changing over time.

Duncan and Hoffman (1985a, 1985b) (with a follow-up by Butrica, 1998) provide the most comprehensive dynamic study to date. Using the PSID, they trace out family income for a sample of children between the ages of one and five in the year prior to their parents' divorce,

from the year before the divorce until five years after the divorce. Their study is based on divorces or separations that occurred between 1969 and 1975. The divorced sample's income in the years around the marital dissolution is compared to income for a sample of children in continuously married families between 1971 and 1977. Duncan and Hoffman find that the average income of children whose parents' divorce or separate falls by about 30 percent in the year after the divorce, but that within five years of the marital dissolution, their average income is close to its pre-divorce level. Most of this recovery can be explained by high rates of remarriage: for children whose mothers' remain unmarried throughout the observation period, income levels remain about 30 percent below their initial levels. Furthermore, although children whose mothers' remarry regain their previous levels of income, they never catch up to their peers whose parents remain married because incomes in continuously married families grow throughout the period.

Our study is similar in spirit to that of Duncan and Hoffman, but it goes beyond their work by employing a more comprehensive statistical methodology. Our empirical framework allows us to control for income growth over the life-cycle, which enables us to estimate the effects of divorce on income and food consumption relative to what they would have been if the divorce had not taken place. We are also able to allow for differences in income growth across family types, and to control for macroeconomic factors whose omission may bias previous estimates. Our study extends Duncan and Hoffman's sample by 12 years, and includes children between birth and age 16 instead of between the ages of 1 and 5. Focusing on young children (and, therefore, young parents) could lead to biased estimates of the average divorce effect since earnings growth is steeper among young workers and since mothers' labor supply is lowest when their children are young.[6]

To our knowledge, there have been no attempts to take unobservables into account when estimating the economic losses experienced by children who are born out-of-wedlock.[7] Cross-period comparisons have not been applied to this group, presumably because it is difficult to come up with an appropriate "initial" period. Our model can be extended to provide such estimates, however. Using a sample of children born into single-parent families, we estimate the family income and consumption increases experienced when their mothers marry and interpret the negative of these estimates as upper bounds on the loss associated with single-parent status. If women who marry have larger potential gains to marriage than those who do not marry, then our estimates will overstate the gains to marriage for the child in the typical out-of-wedlock household, but they will still be lower than the cross-sectional statistics that are currently cited because they will be based on a model that controls for fixed effects.

II.B. Econometric Model

Our basic approach is to use a fixed-effects estimator to control for unobserved family characteristics that may be correlated with divorce and marriage probabilities, using data for children whose parents' marital status changed at some point during our observation window and a comparison group of children whose parents' marital status did not change during the period. Specifically, given longitudinal data on family income and consumption and marital histories, the effects of divorce can be modeled in the following way:

(1) $\ln I_{it} = X_{it}\beta + D_{it}\delta + \alpha_i + \gamma_t + u_{it}$

where I_{it} is a measure of the household income (or food consumption) of child i in year t, X_{it} is a vector of child/family specific variables that vary over time and that may be correlated with the child's economic status, and D_{it} is a vector of dummy variables indicating that a divorce has

taken place in a future, current, or previous year. The error term has three components, a child-specific fixed effect, α_i, a year-specific effect, γ_t, and a random component, u_{it}.

The vector of divorce indicators (D_{it}) contains three types of variables: dummy variables that equal one in the years prior to the divorce, a dummy variable equal to one in the year that the divorce takes place, and a series of dummy variables indicating that a divorce took place in a previous year. The first set of indicator variables captures the possibility that income and consumption may begin to deteriorate prior to the actual divorce. This might happen if, for example, a divorce is precipitated by a parent's job loss: failure to include "years prior" dummies would lead to a biased estimate of the effect of the divorce. Our model, therefore, includes a dummy variable for each of the two years preceding the divorce. The dummy variable indicating the year of the divorce captures the immediate effect of the divorce on family income and consumption, whereas the coefficients on the set of variables indicating that a divorce has taken place in a previous year will reflect the persistence of the divorce effect over time. We follow the post-divorce period for six years, including a dummy variable indicating that six or more years have elapsed since the divorce took place.

The error term in the above equation contains a time-invariant child-specific effect, α_i, which captures anything about the child's family that is constant over time. Since most children in single parent families live with their mothers, this variable will primarily pick up characteristics of the child's mother that may be correlated with both divorce probabilities and the family's income. If mothers with lower earnings capacity are more susceptible to divorce, then estimates of divorce effects that fail to control for α_i will be biased towards finding larger losses. As discussed above, other studies have estimated the losses associated with divorce by comparing family income in a particular period before the divorce to income in a particular

period after the divorce, but unless this change is compared to an appropriate control group the estimates produced using this method will not tell us how much more income the children would have had if their parents had remained together. Furthermore, the approach may overstate or understate the average annual losses associated with the event, depending on which "before" and "after" years are chosen. The advantage of the model we employ is that it traces out the economic consequences in each year following the divorce and allows us to estimate both the short-term and long-term effects, which may differ.

Because this model includes fixed effects, the variables in X that do not vary over time, such as race and mother's education, are eliminated from the model. The only variables included in X are the child's age, his age squared, and family size.[8] Equation (1) also includes a vector of calendar-year dummy variables (γ_t). These variables will control for economy-wide income and consumption changes over time, including both business cycle effects and trends in income and consumption over the period we study.

Unbiased estimates of the economic consequences of being born into a single-parent family are even more elusive than unbiased estimates of divorce effects because unlike the case of divorce there is no obvious "before" period to compare the single-parent family's income or consumption. As a result, existing information is limited to simple cross-sectional comparisons. We propose an alternative way of estimating these losses that allows us to incorporate family fixed effects. Specifically, using a longitudinal sample of children born out-of-wedlock we can estimate the parameters of the following model

(2) $\ln I_{it} = X_{it}\beta + M_{it}\delta + \alpha_i + \gamma_t + u_{it}$

Where M_{it} is a vector of dummy variables indicating that a marriage has taken place in a future, current, or previous year. The negative of these parameters can be interpreted as the loss

associated with remaining in a single-parent family that was formed by an out-of-wedlock birth. This model is essentially the inverse of equation (1) in that it compares changes over time in the family income and family consumption of children whose parents' married at some point during our observation window to changes over time for those families in which the parents remained single. The advantage of this approach is that it allows us to control for unobservable child/family specific factors that may be correlated with both marital decisions and economic status.

Our estimates of δ provide information on the effects of changes in family structure on the children who experience them. In the language of Heckman, LaLonde, and Smith (1999) we estimate the effect of "treatment on the treated." If the impact of divorce or marriage would be different for children whose family structure remains constant over time then $\hat{\delta}$ will be a biased estimate of the average effect that divorce or marriage would have on the population. For example, if the gains to marriage are larger for women who choose to marry than for women who choose not to marry then our estimates of δ will be upward biased estimates of the costs of growing up in a single-parent family formed by an out-of-wedlock birth. We show, however, that even with this upward bias our estimates are substantially smaller than estimates that do not control for fixed effects. Furthermore, they do directly apply to the majority of children born to single mothers, since 52 percent of children born to single parents have spent some time in a two-parent household by the time they reach age 15. Forty percent of these children experience at least one year in a two-parent household by the age of six.

In the case of divorce, similar issues arise; we estimate the family-level effects of divorce among those children whose parents do actually divorce. In this case, however, it is less clear how estimates of divorce effects for the untreated group would be of interest to policymakers.

We care about how much better off the "treated" children would be if their parents had not divorced. Estimates of the population-wide effect of divorce would not answer this question.

III. Data

Our data come from the 1968 through 1993 waves of the Panel Study of Income Dynamics, a longitudinal survey conducted by the University of Michigan's Institute for Social Research. The PSID began by interviewing a national probability sample of families in 1968 and has reinterviewed the members of those families every year since. The PSID also follows a subsample of families in poverty. We make use of both samples in order to increase the precision of the estimates. Our regressions are weighted using the individual weights for the last year in which the individual is observed.

Since our primary interest is in how family structure affects children's access to economic resources, our sample consists of children who are potentially followed from the year of birth until age 16. Our analysis is based on two samples: the first sample consists of children born into two-parent families, and the second sample consists of children born into single-parent families. We use the first sample to estimate the effects of divorce, and the second sample to estimate the losses associated with being born out-of-wedlock. Children who were born prior to the 1968 survey are excluded from the sample because we cannot determine whether they were born into a two-parent or single-parent family. After individuals turn 16 they are no longer followed, because we want to be sure that any observed changes in family structure are associated with their family of origin. Some PSID children are not present throughout the entire length of the survey. We include these individuals from birth until the first year they are missing data, but do not include them in any subsequent years even if they have valid data, because the

missing years make it impossible to determine parents' marital status in that year, and, therefore, to accurately ascertain the number of years since a change in family structure took place.

We use two different measures of a family's economic resources: the log of family income, and the log of family food consumption. Each of these measures has its pros and cons as a measure of economic well-being. A number of researchers have argued that consumption measures are preferable to income measures because income systematically understates the financial resources available to a household, and because consumption is a more direct measure of well-being (Meyer and Sullivan, 2001). Unfortunately, consumption information in the PSID is limited to food consumption, and although food consumption is the sort of necessary expenditure that is of interest to policymakers, one might expect to see less variation in food expenditures than in almost any other consumption item: families may spend down their savings in order to maintain some threshold level of food consumption. We remain agnostic about which measure is best, and present the results for both.[9] Following most of the literature we focus on estimating the relationship between family structure and pre-tax income,[10] but we have also estimated our models using post tax income and income-to-needs as dependent variables, and the estimates generated from those regressions are very similar to our gross income results.[11] In order to account for changes in family composition that accompany resource changes, all of our regressions control for family size.

Income and consumption are measured at the level of the PSID family unit. This means that if children are living with both their mother and their grandparents, and the mother and grandparents are pooling resources and expenses, then the grandparent's income contributions are included as part of what is available to the child. This seems like the most appropriate

method to measure income and consumption for the children (given the data at hand), since single parents' living arrangements may be chosen as a way of maximizing their resources.[12]

Focusing on family-level measures of either income or consumption raises an important caveat against interpreting our estimates (and those of the many other studies using similar measures) as changes in the resources that reach individual children within the family. Focusing on family-level measures overlooks the important question of how resources are allocated *within* families. It may be that economic shocks cause parents to disproportionately reduce their own consumption in order to maintain their children's consumption at its previous level. On the other hand, cohabitating males or stepfathers in the household may raise family income by more than they increase the resources that are directed to the children. While there is no longitudinal data set that would allow us to investigate this issue, this caveat should be kept in mind when interpreting the results that follow.

The timing of the PSID questions varies across the different variables. Questions about family income clearly refer to the previous calendar year, whereas information about family structure is recorded at the point of the interview. Since a change in family structure recorded at the time of the interview may have occurred at any time in the previous year, we ignore the different frames of reference and match the family structure and income data from the same *survey* year.[13] The timing of the food consumption questions is ambiguous, but Zeldes (1989) argues that it refers to the point of the interview rather than the previous year.[14] Again, we match the family structure information and the consumption information from the same survey year.

We eliminate observations for which income or consumption data are imputed.

A limitation of the PSID is that it is difficult to identify relationships among sample members who are not household heads. This is probably not a serious problem for the sample of

children who begin life in two-parent families since the parents of most of these children are household heads or wives whose marital status is well documented, but it is potentially problematic for our sample of children born out-of-wedlock because a larger fraction of these children are living in families in which the household head is not the parent. We therefore use the PSID Relationship and Marital History files to carefully document transitions between marital (or cohabitating) states. We define a family as a two-parent family if the child's custodial parent is married or living as a couple with another adult. Our definition of divorce includes married couples who are living in separate residences and unmarried couples who had been living together but are separated. Similarly, when we refer to "marriage" among parents of children born out-of-wedlock we include both legal marriage and cohabitation. These broad definitions of two-parent families are intended to focus our analysis on the economic consequences associated with the presence of a second adult in the household, regardless of legal marital status. They are also driven in part by data limitations. The PSID does not distinguish between marriage and cohabitation prior to 1983. If we restrict our sample to look only at years after 1983, we have far too few children living in households with cohabitating parents to produce meaningful estimates.

After deleting observations for which the income and consumption measures are imputed or missing, the sample of children beginning life in a two-parent family contains 53,293 child-year observations, and 7,463 children, 1,235 of whom experience a parental divorce. The income sample of children born out-of-wedlock contains 12,722 child-year observations and 2,042 children, 465 of whose custodial parents marry sometime before they turn 16. These samples are slightly smaller when consumption is our dependent variable since the PSID is missing food consumption information in 1973, 1988 and 1989.

IV. Results

IV. A. The Economic Consequences of Marital Dissolution

In Table 1 we document why cross-sectional comparisons of family income or consumption would be misleading. The table provides the means of our variables in the year of the child's birth, which is before the change in family structure occurs. On the left side of the table we see that those households that will eventually experience a divorce have lower income and food consumption than those households in which the parents remain together. Parents who ultimately divorce also have less education on average, than parents who remain together, and are more likely to be black.

These *observable* differences across families provide a hint that *unobservable* differences may also be correlated with both family structure and income. In Table 2, columns 1 and 2 show that when we use our data to run ordinary least squares regressions of family income and food consumption on marital status (controlling for the child's age, age-squared, race, mother's education and year dummies) we find that children living in divorced families have income that is 52 percent below and food consumption that is 27 percent below that of children living in intact families. The next two columns show what happens to the estimated resource loss when we take unobservable differences into account. Columns 3 and 4 are based on equation (1), and document the losses over multiple years following the first divorce. The estimates in columns 5 and 6 are based on regression models that control for the possibility of remarriage. We present Huber adjusted standard error estimates, which take into account that we have multiple observations for the same individuals and the possibility that siblings' error terms are correlated.

Beginning with the middle two columns of Table 2, we see that including fixed effects substantially reduces the estimated cost of divorce. Nevertheless, the declines in income and

consumption are still large: in the first year following a divorce, for example, family income falls by about 41 percent and food consumption declines by 18 percent.[15] [16] Over most of the post-divorce years, the reduction in food consumption is around 50 to 70 percent of the income reduction.[17] This is broadly consistent with previous studies that have estimated the elasticity of food consumption with respect to income to be between 0.6 and 0.7.[18]

Over the course of the next six years, roughly half of the loss in household income is recouped so that six or more years later, income is 21 percent lower than it would have been if the divorce had not occurred. Similarly, food consumption is just six percent lower than would be expected with no divorce. These estimates are notably smaller than those produced by simple before and after comparisons, which are typically weighted towards short-term losses. Using the same dataset, McLanahan and Sandefur (1994) for example, estimate that teenagers who experience a parental divorce sometime between ages 12 and 17 experience an income decline of approximately 50 percent.

On the other hand, at first glance our estimates appear to be substantially larger than those produced by Duncan and Hoffman. Duncan and Hoffman emphasize the ratio of post-divorce to pre-divorce income and find that in the year following separation children's (pre-tax) family income is 32 percent lower than its pre-divorce level and that five years later it is just four percent lower than its pre-divorce level. Our estimated losses of 41 percent (one year) and 24 percent (five year) are larger because our model explicitly accounts for income growth over the life-cycle. Assuming that parents who divorce have similar income trajectories as parents who remain together, Duncan and Hoffman's estimates suggest that children whose parents divorce experience a 37 percent decline in income in the year following a divorce, and that five years after the divorce takes place their income is 14 percent lower than it would have been. The small

differences between these estimates and our own may result from our ability to control for macroeconomic conditions.

Two potential explanations for the recovery pattern immediately come to mind. First, mothers' human capital investment or changes in labor force participation may increase family income over time. Second, some mothers will remarry, thus increasing the income available to their children through the addition of a spouse's earnings. About 30 percent of the divorced parents in our sample ultimately remarry during our observation window.

We explore the second possibility in the last two columns of Table 2, where the estimates are now based on a specification in which we control for whether the child's parent is remarried. Specifically, we include a dummy variable that is equal to 1 if a child whose parents have previously divorced is currently back in a two-parent household, and is equal to 0 otherwise. The coefficient on the single-parent dummies now indicate the average effect of divorce "x" years after the initial divorce, for those who are not currently remarried (but may have remarried and redivorced). We find that subsequent marriages explain a large portion of the recovery process: family income of children whose mothers are not married six or more years after the marital dissolution are 45 percent lower than they would have been if the divorce had not taken place. Among those who do not remarry, food consumption recovers more than income but six or more years later it remains 16 percent lower than if no divorce had occurred.

Our estimated coefficient on the remarried variable may be used to calculate the effect of remarriage relative to remaining in the initial marriage. The percentage effect is given by taking the exponent of the sum of coefficients on the remarriage dummy and on the relevant years-since-divorce dummy, and then subtracting 1. A child whose parents divorced six years ago but whose primary parent remarried, for example, will have a family income that is nine percent

higher than if the divorce had not occurred. [19] This estimate is not statistically different from zero, however, so there is no evidence that second marriages lead to higher family income than first marriages.

Previous work has emphasized that changes in family structure are a common pathway into (and out of) poverty (Bane and Ellwood, 1986). Our results can be interpreted in this light: we estimate that in the long-run the average family experiences a six percent fall in food consumption and a 21 percent reduction in income, but that the size of the expected change is closely tied to subsequent changes in family structure. Many parents will remarry and thus restore some of the income lost with divorce. For children whose parents do not remarry quickly, however, there are large and persistent reductions in income and consumption following divorce.[20]

IV.A .1. Robustness Checks

One concern with the estimates presented in Table 2 is that even in the absence of divorce income may grow less rapidly among those who will eventually divorce than among those families that remain intact. If this is true, our fixed-effects estimates will overstate the reduction in income due to the divorce, since our estimates of income growth over the life-cycle are identified off of both types of families. In order to investigate this possibility, we have estimated models in which we include both a family-specific trend and a family-specific fixed effect. These models produce no evidence that divorcing families have lower earnings trajectories than intact families. In fact, parents who ultimately divorce have slightly more positive earnings trends than those who remain together, although the difference in trends between these two groups is not statistically significant. As a result, the inclusion of family-specific trends slightly

increases the estimated cost of divorce, although the estimates are generally not statistically different from those reported in Table 2.

Another potential concern is that our regression framework does not control for time-varying factors that might be correlated with both the probability of divorce and family income. If the onset of mental illness or drug abuse leads to a significant number of divorces, for example, then our estimates may still be biased. Charles and Stephens (2001) examine whether the probability of divorce is associated with job loss or the onset of a disability and find that job loss does increase the likelihood of a marital break-up. This could mean that some of the estimated losses associated with divorce are actually the effect of an earlier, precipitating event. We cannot directly investigate all possible events but we have tried to acknowledge their possible effects by including dummy variables for years prior to the divorce in order to see whether some other event could be generating the decline in income. We find no evidence that family income falls in any year prior to the divorce. Food consumption begins to fall in the year prior to the divorce, but this may simply reflect respondents' uncertainty about the time period to which the PSID question refers. We have also run regressions that include variables indicating whether the head of household has recently become unemployed or disabled, since these events are observable in the PSID, but including these controls has no substantive impact on our estimates. Finally, we have run IV regressions using an indicator for whether the family's state of residence currently has a unilateral divorce law as an instrument for divorce. Several researchers (for example, Friedberg, 1998; Gruber, 2000; Reilly and Evenhouse, 1997) have documented a correlation between unilateral divorce laws and divorce rates. Unfortunately, virtually all of the within state variation in unilateral divorce laws occurs during the early 1970's, which means that most of the children in our sample cannot contribute to this IV identification

strategy. As a result, the standard error estimates produced by our IV analysis are more than two orders of magnitude larger than those produced by OLS, so our IV estimates provide no information about the economic consequences of divorce.

IV.B. The Economic Losses for Children Born to Single Mothers

Estimating the losses for children born into single-parent families is trickier than estimating the losses associated with divorce because the event that creates the single-parent family does not provide a change in marital status to which the new levels of income and consumption can be compared. As a result, most of what we know about the relative status of such families comes from cross-sectional comparisons. As was the case with respect to divorce, Table 1 indicates why these cross-sectional approaches might be problematic: compared to the mothers of children born into two-parent families, the mothers of children born out-of-wedlock have typically completed lower levels of education and are much more likely to be black. Within the sample of children who are born into single-parent families there are also differences in observable characteristics between those whose mothers eventually marry and those whose mothers do not. Single mothers who do eventually marry are less likely to have only a high school education, and are much less likely to be black.[21] Differences in the observable characteristics presented in the table may only hint at important differences in unobservable characteristics across groups. Our method of estimating the losses associated with single parenthood allows us to control for these characteristics.

Using our sample of children born out-of-wedlock, we compare the family income and consumption gains experienced by children whose mothers eventually marry to the gains among children whose mothers remain single, and interpret the negative of these estimates as the

estimated loss in family resources associated with remaining in a single-parent family. The drawback to our approach is that, by using women who marry to identify the costs of living in this type of single-parent family, we will generate a type of selection bias. If there is heterogeneity in the gains to marriage and, as seems likely, those women who marry have larger gains to marriage than those who do not, our estimates will be upward biased estimates of the average income gain that would result if all out-of-wedlock mothers were to marry. However, the estimated effects are unbiased estimates of the gains to children whose parents actually do marry. As noted above, roughly half of the parents of children born out-of-wedlock will marry before the child is 15 years old.

In the first two columns of Table 3, we show the effects of marriage on income and food consumption based on an OLS regression, intended to mimic the type of cross-sectional estimates in the earlier literature. The OLS coefficients suggest that children born to single parents who are currently in married households have family incomes that are 126 percent higher than those remaining in single parent homes. The estimated effect on food consumption is much smaller, at 22 percent.

The next two columns of Table 3 show the effects of marriage using fixed-effects models to control for unobservable characteristics. These point estimates imply that one year after marriage family income increases by 68 percent. Six or more years after the marriage, income is 45 percent above what it would be if the children remained in single-parent families. The confidence intervals around these estimates are quite large, however.

Food consumption is estimated to increase by 17 percent in the year of the marriage, but immediately falls again. The effects of marriage on food consumption are very small, sometimes negative, and never statistically significant in the years following the marriage. The point

estimates indicate a much lower elasticity of food consumption with respect to income than we found in our sample of children born into two-parent families, which probably results from the mothers' relatively lower incomes. Food consumption is likely to be maintained at some minimal level even when income is at the very low levels found in many of these single-parent households.

On the right side of Table 3 we show what happens to our estimates when we control for the possibility of initial marriages breaking up (and for subsequent marriages), by including a dummy variable that is equal to 1 during years in which a child whose parent eventually married is again in a single-parent family. These estimates show that declining economic gains shown on the left side of the table are driven mainly by the fact that many marriages do not last: for those children whose parents remain married there is a fairly stable increase in income of about 70 percent.

Echoing the previous section, we can calculate the percent effect of ending an initial marriage relative to never having been married by taking the exponent of the sum of the coefficients on "no longer married" and the relevant years-after-marriage variable, and then subtracting 1. This number is not statistically different from zero. We, therefore, find no evidence that marrying and then divorcing leaves families with incomes that are any lower than they would have been if the mothers had never married.

These large income estimates suggest that single-parent families suffer substantive economic losses *as a direct result* of parents' marital status, and that cross-sectional differences between the family incomes of children living in different types of families do not merely reflect differences in their parents' unobservable characteristics. At the same time, however, we find that cross-sectional comparisons will substantially overstate the potential gains from marriage.

Further, the gain to a typical child whose mother marries at a point in time is even smaller, since many of these marriages will be short-lived.

As with our sample of children born into two-parent families, we have also attempted to estimate models that allow for family-specific trends using our sample of children born to single parents. Unfortunately, these models are not well-identified because for many of the families in the sample, there are relatively few observations available prior to the marriage. Our results provide some suggestive evidence that those mothers who do eventually marry have higher rates of income growth in the years prior to marriage than those who do not. Although the differential in the income growth rates is not statistically significant, the point estimate is fairly large, suggesting an annual income growth rate that is five percent higher among women who do eventually marry. Including family-specific trends reduces the estimated gains to marriage, but also makes the estimates extremely imprecise, so that we cannot statistically distinguish most coefficients between the two models (those with and without family-specific trends).

Our estimates stand in stark contrast to those produced by recent studies that have examined the consequences of teen/out-of-wedlock births. Empirical approaches that attempt to address the endogeniety of early and pre-marital fertility decisions typically yield estimates that are smaller than ours and/or not statistically significant. Geronimus and Korenman (1992), for example, compare outcomes among sisters—one of whom had a teen birth and one of whom became a mother at an older age—and find that the effect of teen childbearing on log family income ranges from an insignificant 12 percent reduction to a statistically significant 32 percent reduction. Bronars and Grogger (1994) identify the effect of unplanned fertility among women whose first birth was a pre-marital birth by comparing outcomes for those with singleton births

to outcomes among those who gave birth to twins. They find that an unplanned birth lowers family earnings by about ten percent.

The differences between our findings and these related studies are likely to be driven by the fact that other studies focus on a different counterfactual. Bronars and Grogger's estimates tell us how much better off women who have out-of-wedlock births would be if they had fewer children, and under certain assumptions, how much better off they would be if they had no children at all. In contrast, we are asking "How much higher would the family income of children born out-of-wedlock be if they instead lived in two-parent households?" This distinction is important because Bronars and Grogger's estimates reflect the effect of non-marital childbearing on own earnings, on the average earnings of a potential spouse, and on the likelihood of marriage. In contrast, our estimates are independent of any changes in the probability of marriage. Bronars and Grogger find that unplanned, non-marital fertility has a negative impact on later marriage probabilities, particularly for those samples for whom they find significant reductions in family earnings, which is consistent with the difference between their estimates and our own.

Geronimus and Korenman's study is designed to tell us how much better off women who have teen births would be if they delayed childbearing until they were older. The key difference between their study and ours is that Geronimus and Korenman focus on the mother's age at first birth while we focus on the mother's marital status. Because teen childbearing and out-of-wedlock childbearing are highly correlated, we would expect the two studies to produce somewhat similar estimates. The correlation is not perfect, however, and so it is not surprising that the estimated effects of a teen birth (relative to a later birth) on family income are smaller than the estimated effects of a non-marital (relative to marital) birth. Indeed, Geronimus and

Korenman find that differences in marriage propensities between those women who have a premarital birth and those who do not explain a substantive part of the relationship between teenage childbearing and future income.

It is also interesting to consider how our estimated marriage effects compare to our estimated divorce effects. One important difference between the results in Tables 2 and 3 is the degree to which the OLS and fixed-effects estimates differ from one another. While the fixed-effects estimates of the effects of family structure changes are smaller than the cross-sectional estimates in both cases, the difference is much more pronounced in Table 3. This is consistent with unobserved individual characteristics playing a particularly important role in determining which single mothers will eventually marry.

The losses from divorce for children born to two parent households are larger (in percentage and absolute terms) than the gains from marriage for children born to single parents. To see this, consider what would happen if the percentage effects were equal across the two samples. Then, the 45 percent long-run loss in income experienced by those whose parents divorce (5^{th} column of Table 2) would imply that moving from the unmarried to the married state would result in an 82 percent increase.[22] Our estimates in Table 3 are closer to 70 percent.

Another way to summarize the difference across the two samples is to compare the coefficients on the divorce variables in the final two columns of Table 2 to the coefficients on the "No longer married" variables in the right hand columns of Table 3. Both sets of coefficients tell us how income and consumption change when an adult moves out of the household, but the divorce estimates from Table 2 are consistently larger than the "No longer married" estimates in Table 3. Likewise, the coefficient estimates on the marriage dummies in columns 5 and 6 of Table 3 are smaller than the "Remarried" estimates in Table 2. This makes clear that our

estimates have not uncovered a general asymmetry between the cost of divorce and the gain from marriage, but rather that the differences in the magnitudes of the coefficient estimates in Tables 2 and 3 reflect differences in average effects of marriage across the two samples. Gains associated with marriage among children born to single parents are smaller than those among children born to two parent households. This is consistent with a selection story in which women with relatively lower potential gains to marriage are more likely to bear children out-of-wedlock.

V. How do Families Adjust to Changes in Family Structure?

Our estimates indicate that the economic losses experienced by single-parent families with children are substantial.[23] These losses might be bigger still, however, if families failed to adjust their behavior in response to changes in family structure. Consider the effects of divorce in the absence of any changes in labor supply, household structure (other than departure of one parent), or welfare receipt: assuming that children remain with their mothers, the mechanical effect would simply be the loss of the father's income. But these losses could be much lower if family members draw on other income sources. In order to better understand how different potential behavioral responses combine to affect our estimates, we next look at individual components of income around the time of the change in family structure.

V.A. Behavioral Responses to Divorce

We begin our analysis of income components by estimating the average loss in father's earnings, which illustrates (approximately) what would happen to family income if there were no behavioral responses.[24] Here, we essentially re-estimate equation (2), but replace our dependent variables with father's earnings and look specifically at the first two years following divorce.

Note that for this exercise we use income measured in levels rather than in logs, which leads to a larger estimated percentage income decline, but allows us to include cases in which the individual income components are equal to zero. The levels specification is not our preferred specification for the main analysis because a change in family structure is likely to have very different level effects on rich and poor families. The table controls for remarriage (as in the last two columns of Table 2) so that estimates for the "after" period are for children whose parents remain unmarried. The results produced by this exercise are shown in the first row of Table 4. In subsequent rows of the table we add child support, mother's earnings, welfare income,[25] and the earnings of other household members to the income definition.

In the period 1 to 2 years after divorce, father's income falls to zero, which translates into an average loss of approximately $35,000. This corresponds to an 88 percent loss in family income relative to the year before the divorce takes place.[26] Of course, it is not necessarily the case that father's income will disappear completely from the child's set of available resources since many fathers pay child support when they no longer reside in the household. The second row of Table 4 shows how divorce affects the sum of father's income and child support. Child support appears to replace a relatively small fraction of the income of the co-resident father. The loss of income from the father in the initial years after a divorce is approximately 12 percent lower when child support is included, or roughly $31,000. The magnitude of this estimate is roughly consistent with average child support received, as reported by the Census Bureau, of approximately $3700 in 1995 (U.S. Census Bureau, 1999).

One potentially important behavioral response following divorce is a change in mothers' labor supply. The next row of Table 4 adds mother's earnings to the measure of income used in row 2, and shows that this response plays a role that is approximately equal to the role of child

support in replacing the loss in income following the father's departure. Adding mother's earnings to the income definition reduces the initial loss by another $4000 to approximately $27,000 in the initial years after the divorce, which translates into a 67 percent loss in total family income. Of course this gain in income may come at the expense of spending time with her children and does not take additional child care expenses into account.

Along with increases in earned income, any take-up of public assistance for single mothers will further diminish the costs of divorce. Row 4 of Table 4 shows, however, that the extent to which transfer income mitigates the loss in fathers' income is small compared to the effect of child support and mother's earnings. When we add AFDC benefits to the income definition in the initial years after divorce the total income loss is diminished by just $700.

At first glance, the estimated effect on total family income of adding income from other family members is puzzling (Row 5). One might expect that other family members, such as grandparents or aunts and uncles, would increase their contributions to the family following a relative's divorce. In fact, our estimate implies that the opposite is occurring. The result is driven by a few families who receive extremely high levels of income from other family members before the divorce occurs, and disappears when the top 1 percent of the distribution of other income (before the divorce) is removed from the sample.

V.B. Behavioral Responses to Marriage

In the last column of Table 4, we repeat the income decomposition for our sample of out-of-wedlock children whose mothers marry. The first row shows the increase in income that would occur if the only change resulting from marriage was the addition of a male partner. Father's earnings increase family income by approximately $18,000 in the first two years after

marriage, which would more than double total family income if all other income sources remained the same.[27] The second row in the table considers whether the gains to marriage are reduced when we account for the fact that child support may have been received prior to marriage, and shows that for children born to single-parents child support plays a very limited role: adding child support to the income definition reduces the gains to marriage by less than $400.

We next examine the extent to which an adjustment in mother's labor supply may alter the gains associated with marriage. As was the case with children born to two parent households, the mother's labor supply response affects the estimated resource cost by about $4,500. This implies that the cost of single-parent status is about 25 percent smaller than it would be if mothers did not increase their labor supply as a result of being without a live-in partner.

Unsurprisingly, AFDC plays a somewhat larger role maintaining income among out-of-wedlock children than among children who experience divorce. Including AFDC in the income definition reduces the estimated gains to marriage by roughly $950 (or 7 percent).[28] Finally, the contributions of other family members also appear to be reduced when marriages occur. Including earnings of other family members reduces the gains to marriage by about $700.

To return to our earlier comparison of results for children born to single versus two parent households, it is interesting to note that the largest portion of the difference in the effects of marriage across the two samples is driven by the earnings of fathers (and other household members). There are significant differences between the earnings of men who are leaving the divorcing households and the earnings of men who join the marrying households. This would

again be consistent with differences in the underlying populations of women (and their current or potential spouses) who bear children before versus after marriage.

VI. Conclusions

Family structure has a significant impact on the economic status of families with children. In the long run, family income of children whose parents divorce and remain divorced for at least six years falls by 45 percent and food consumption is reduced by 16 percent. Among the less-studied population of children born to single parents there is no evidence of an increase in food consumption, but those whose parents marry and remain married for at least six years experience income gains of around 70 percent. The more modest effects of living with a single parent on food consumption suggest that children's access to essentials may be somewhat better protected than income estimates indicate.

While our estimated effects of family structure on income are large, three important points should be kept in mind. First, because the estimates are based on variation within the same families over time they are substantially smaller than estimates based on cross-sectional comparisons of different types of families. The frequency with which cross-sectional income comparisons motivate concern about family structure makes it important to recognize the extent to which they may overstate the true losses associated with living in a single-parent family.

Second, the estimated changes, (as in most of the previous literature) do not apply to the typical child who experiences a parental divorce at a point in time, but rather to those whose parents who are currently divorced. When we measure the reduction in family income and consumption six years after the first observed divorce, allowing our coefficient estimates to capture the possibility of remarriage, we find income losses of about 20 percent, and

consumption losses of just six percent. Similarly, the typical gains for a child born out-of-wedlock whose parent is currently married are smaller than the long-run effects cited above, since many marriages do not last. Those children who return to their original family structure experience virtually no long-run change in family income. Still, even economic shocks of only a few years will last for a non-trivial part of childhood.

Finally, it is important to note that while we estimate that single-parent families have substantially lower incomes than they would have if a second parent were in the household, these income losses do not necessarily translate into a decline in children's resources. Our model cannot inform us about the distribution of resources within families, and it may be that parents work hard to ensure that their children's needs are met by disproportionately reducing their own resources when income falls. This is an important issue that deserves further investigation, although we do not know of any panel datasets that contain information on how resources are distributed within the household. There are also potential non-economic costs of growing up in a single-parent family such as the absence of a supportive relationship with a second parent, or a shortfall in adult time, that we are unable to explore with our dataset. Likewise, we are unable to investigate possible benefits associated with single-parent status--such as the absence of household tension that might arise if parents are unhappily married—that might outweigh the economic costs.

With these caveats, our findings suggest that in families with children family structure has a long-term impact on economic resources. The costs associated with growing up in single-parent families are not temporary but largely persist until a marriage or re-marriage occurs. This has important implications for public policy. The five year time limits recently imposed as part of welfare reform, for example, could result in substantive reductions in the

economic well-being of children living in single-parent families, given that the losses incurred by such families extend beyond five years. On the other hand, policies that mandate an increase in child support payments may be able to help mitigate the decline in income that is associated with single-parent status. Furthermore, if income plays an important role in determining children's later success in life (which is matter of some debate), then our results suggest that policies that encourage two-parent families may be justified.

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Table 1
Sample Means in Year of Birth

	Born into Two Parent Family		Born into Single Parent Family	
	Remain in Two Parent Family	Parents Divorce	Remain in Single Parent Family	Parent Eventually Marries
Pre-tax Family Income	41,945	34,414	17,446	17,571
	(26,948)	(28,084)	(18,635)	(15,926)
Log (Pre-tax Family Income)	10.45	10.16	9.27	9.30
	(0.74)	(1.08)	(1.23)	(1.30)
Food Consumption	5,877	5,284	4,271	4,392
	(2,778)	(2,380)	(2,642)	(2,913)
Mother's ed <= High School	0.55	0.62	0.78	0.75
	(0.50)	(0.49)	(0.41)	(0.43)
Black	0.08	0.11	0.65	0.39
	(0.27)	(0.31)	(0.48)	(0.48)
Family Size	4.14	3.92	4.47	3.86
	(1.32)	(1.10)	(2.05)	(1.98)
Number of Children in Sample	6,228	1,235	1,577	465

Note: Standard deviations in parentheses

Table 2
Estimated Economic Consequences Associated with Family Status
Children Born into Two Parent Families

	OLS		Dynamic Models with Child-Specific Fixed Effects			
			No Controls for Remarriage		Controlling for Remarriage	
	Log Income	Log Food Consumption	Log Income	Log Food Consumption	Log Income	Log Food Consumption
Currently divorced	-0.739	-0.314				
	(0.044)	(0.030)				
	-52.3%	*-26.9%*				
Years before/after first divorce:						
2 years before			-0.008	0.010	0.003	0.014
			(0.061)	(0.045)	(0.060)	(0.045)
			-0.8%	*1.0%*	*0.3%*	*1.4%*
1 year before			-0.035	-0.134	-0.028	-0.131
			(0.051)	(0.061)	(0.049)	(0.061)
			-3.4%	*-12.5%*	*-2.8%*	*-12.3%*
Year of divorce			-0.353	-0.348	-0.378	-0.355
			(0.066)	(0.066)	(0.064)	(0.066)
			-29.7%	*-29.4%*	*-31.5%*	*-29.9%*
Note: Standard deviations in parentheses			-0.530	-0.203	-0.688	-0.253
			(0.070)	(0.055)	(0.068)	(0.054)
			-41.1%	*-18.4%*	*-49.7%*	*-22.4%*
2 years after			-0.379	-0.156	-0.581	-0.220
			(0.069)	(0.056)	(0.066)	(0.059)
			-31.5%	*-14.4%*	*-44.1%*	*-19.8%*
3 years after			-0.326	-0.169	-0.594	-0.255
			(0.078)	(0.069)	(0.071)	(0.072)
			-27.8%	*-15.6%*	*-44.8%*	*-22.5%*
4 years after			-0.230	-0.138	-0.533	-0.233
			(0.076)	(0.055)	(0.069)	(0.059)
			-20.5%	*-12.9%*	*-41.3%*	*-20.8%*
5 years after			-0.279	-0.102	-0.594	-0.200
			(0.090)	(0.054)	(0.080)	(0.056)
			-24.4%	*-9.7%*	*-44.8%*	*-18.1%*
6 or more years after			-0.236	-0.060	-0.594	-0.177
			(0.080)	(0.046)	(0.074)	(0.059)
			-21.0%	*-5.9%*	*-44.8%*	*-16.2%*
Remarried					0.684	0.222
					(0.059)	(0.061)
Percentage effect of remarriage six or more years after initial divorce					*9.4%*	*4.6%*
# of Observations	53293	46523	53293	46523	53293	46523

Note: Standard errors in parentheses. Percentage effects in italics.

Table 3
Estimated Economic Consequences Associated with Family Status
Children Born into Single Parent Families

	OLS		Dynamic Models with Child-Specific Fixed-Effects			
			No Controls for Separation		Controlling for Separation	
	Log Income	Log Food Consumption	Log Income	Log Food Consumption	Log Income	Log Food Consumption
Currently married	0.814	0.197				
	(0.106)	(0.038)				
	125.6%	*21.8%*				
Years before/after first marriage						
2 years before			0.107	-0.163	0.119	-0.158
			(0.108)	(0.123)	(0.106)	(0.124)
			11.3%	*-15.0%*	*12.6%*	*-14.6%*
1 year before			-0.026	-0.047	-0.010	-0.041
			(0.171)	(0.070)	(0.169)	(0.070)
			-2.5%	*-4.6%*	*-1.0%*	*-4.0%*
Year of Marriage			0.554	0.155	0.575	0.164
			(0.137)	(0.067)	(0.135)	(0.068)
			73.9%	*16.8%*	*77.8%*	*17.9%*
1 year after			0.520	-0.036	0.581	-0.012
			(0.134)	(0.082)	(0.131)	(0.084)
			68.1%	*-3.6%*	*78.7%*	*-1.2%*
2 years after			0.478	-0.078	0.603	-0.033
			(0.156)	(0.088)	(0.150)	(0.089)
			61.3%	*-7.5%*	*82.8%*	*-3.3%*
3 years after			0.415	-0.076	0.538	-0.028
			(0.141)	(0.097)	(0.135)	(0.096)
			51.4%	*-7.3%*	*71.3%*	*-2.8%*
4 years after			0.345	0.003	0.508	0.055
			(0.141)	(0.084)	(0.131)	(0.085)
			41.2%	*0.3%*	*66.3%*	*5.7%*
5 years after			0.302	-0.026	0.474	0.031
			(0.149)	(0.090)	(0.143)	(0.098)
			35.3%	*-2.6%*	*60.6%*	*3.2%*
6 or more years after			0.374	-0.014	0.549	0.048
			(0.170)	(0.095)	(0.173)	(0.097)
			45.4%	*-1.4%*	*73.2%*	*4.9%*
No longer married					-0.462	-0.156
					(0.105)	(0.066)
Effect of separation six or more years after initial marriage					*9.1%*	*-10.3%*
# of Observations	12722	10711	12722	10711	12722	10711

Note: Standard errors in parentheses. Percentage effect in italics.

Table 4
Components of Income Change Associated with Family Structure Changes

		1 year before divorce	1-2 years after divorce	1 year before marriage	1-2 years after marriage
Dependent variable					
(1)	father's earnings		-$35,000		$18,012
			(5,920)		(1,530)
(2)	(1) + child support received		-$30,714		$17,696
			(4,950)		(1,541)
(3)	(2) + mother's earnings		-$26,540		$13,158
			(4,787)		(2,390)
(4)	(3) + afdc of head & wife		-$25,857		$12,211
			(4,804)		(2,097)
(5)	(4) + earnings of others		-$26,875		$11,494
			(4,816)		(2,374)
(6)	total family income		-$27,250		$10,998
			(4,709)		(2,611)
Average family income		$39,648		$16,650	

Note: Standard deviations in parentheses

1 Of course, there are also non-economic consequences of living in a single-parent family. Compared to children living in two-parent families, children living in mother-only families are less likely to grow up with a male role model, for example. On the other hand, such children may benefit from less exposure to marital tension than they would experience if their parents were married. Understanding the full range of social, psychological, emotional and economic behaviors that are affected by family structure is beyond the scope of this paper.

2 Legislation for covenant marriages has also passed one house in Georgia, Oklahoma, Oregon and Texas.

3 It is important to note that there is debate about the extent to which income affects children's outcomes. Mayer (1997), for example, uses different methods and finds little evidence that income plays a large role in children's outcomes.

4 Smock, Manning and Gupta (1999) attempt to deal with the selection problem by estimating endogenous switching regression models. Their exclusion restrictions include whether the respondent (wife) worked full-time prior to the divorce, whether she lived with both her biological parents before age 14, her mother's educational attainment, age at the time of the marriage, duration of marriage and whether the marriage was a first marriage for both spouses. The authors argue that these variables predict the likelihood of marital disruption. These variables are also likely to be correlated with income, however.

5 Bane and Weiss (1980) and Weiss (1984), for example, restrict their analysis to a sample of women who remain unmarried. Peterson (1989) focuses on women aged 30-44 in 1967. Stirling (1989) looks only at women who have been divorced for at least five years.

6 Since mothers' labor supply has been increasing over time, the divorce effect may be smaller in more recent years. Our ability to include 12 additional years of data, may therefore affect the average estimates as well.

7 There is a large related literature on the relationship between teen/out-of-wedlock childbearing and mothers' socioeconomic outcomes, which focuses on a different counterfactual. In that literature, the question of interest is "How much better off would the mothers be if they did not have a child out-of-wedlock?" Alternative choices for those women would include delaying childbearing until marriage or choosing not to have a child at all. Our interest focuses on how much better off children would be if their mothers were married. This question is different in that the alternatives of choosing not to have a child, or delay childbearing are not relevant. See section 4B for additional discussion of this literature.

8 In the consumption regressions we also control for the family's "food needs," which is a variable created by the PSID to measure the caloric needs of the family, accounting for family size, sex, and the age of the family members.

9 Food consumption data are missing for 1973, 1988 and 1989. The PSID also includes information about expenditures on rent and mortgage payments, and utilities, but these data are missing additional years and so we do not use them. It would be difficult to compute housing consumption flows from owner occupied housing since some households have no mortgage payments.

10 Our family income measure includes all sources of cash income, but does not include the value of in-kind benefits such as Food Stamps. In-kind benefits certainly raise the effective income of some families, but information on most in-kind benefits is not available in the PSID. The dataset does contain information on the cash value of Food Stamps, but including one type

of in-kind benefit and not others would result in an arbitrary definition of income. Nevertheless, we have estimated all of our models using cash income + Food Stamps as a dependent variable and obtained very similar results. The estimated losses are slightly smaller when Food Stamps are included but they are not statistically different from the losses reported in Tables 2 and 3.

11 The results from these exercises are available from the authors.

12 An exception to this is that individuals who return to an extended family home after being out on their own continue to be interviewed by the PSID as a separate family unit. For example, an adult daughter of a PSID family who returns to her parents' home after having a child will continue to be counted as a head of her own household.

13 We have also conducted the analysis linking the current survey year's family structure information to the following survey year's income information and obtain very similar results.

14 An exception is food expenditures paid for using food stamps. Before 1977, this is measured using average monthly food stamp expenditures last year, but after 1977 the question refers to food stamp expenditures in the month of the survey.

15 The estimated "year of divorce" effect for the income measures will provide a mixture of income from before and after the divorce. For this reason, we refer to the period one year after the divorce as our first post-divorce observation. For food consumption, the timing is slightly different. The food consumption questions, as noted above, are likely to refer to the year of the survey, and so the "year of divorce" effect will capture a post-divorce period.

16 In the first year following divorce post-tax income falls by 32 percent. Six or more years later the average decrease is 15 percent. These declines are notably smaller than those based on gross income because changes in family structure can change a family's tax bracket.

17 Because the timing differs between the consumption and income measures, this ratio is calculated using, for example, the effect on food consumption one year after the divorce relative to income two years after the divorce.

18 See Tobin (1950), Maddala (1971), Izan (1980) and Magnus and Morgan (1997) for estimates of the income elasticity of food.

19 The percentage effect is calculated as $e^{\delta_6+\delta_{Re\,married}}-1$. In this example, $e^{-0.594+0.684}=0.094$.

20 If step-parents or unrelated cohabitors are less likely than natural parents to fully share their income with the child, the larger effects shown in the final two columns of Table 2 may remain the more relevant estimates for children of divorced parents.

21 It is worth noting that while family income is almost the same in the year of birth for out-of-wedlock children whose parents do not marry and for those whose parents do eventually marry, in subsequent years this reverses. For example, among children who are still in single parent families at the age of four, average family income among those who will later marry is more than $14,000, but among those whose mothers are not observed to marry before the end of our sample average family income is about $12,000. This pattern appears to be driven by a few outliers, and may reflect changes in living arrangements over time. For example, a teenage mother may live with her parents during the year her baby is born but may subsequently move out.

22 To see this, let the percentage effect of divorce be given by b, income when married be given by Ym, and income when not married be given by Ynm. Then, Ym(1-b) = Ynm, which implies Ynm(b/(1-b))=Ym. When b=.45, (b/(1-b))= .82.

23 Of course, our estimates tell us nothing about the distribution of resources within families. It may be that when resources decline parents reallocate in order to maintain their children's

previous consumption levels. This is an important issue that deserves further investigation but we know of no data on the distribution of family resources that follows families over time.

24 More precisely, we use father's income within the child's household. In the years after a divorce in which the father has left the household, father's income is equal to zero.

25 Our definition of welfare income includes income from the AFDC program but does not include the value of in-kind benefits such as Food Stamps, since our measure of total income does not include Food Stamps (see footnote 10).

26 Results for subsequent years are very similar and are available from the authors upon request.

27 We refer to "father's income" although this may actually be step-father's income, or the income of a male cohabitor who is unrelated to the child.

28 This falls to about $600 in the later years after marriage.

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